

interest to all geologists, not only to those in India. But perhaps his most important work for the Survey was the "Report on the Great Earthquake of 12th June 1897", forming vol. 29 of the "Memoirs" (1900). Seismology was now his chief interest. He was the first to show (*Phil. Trans.*, A, 194, 135) that the disturbance set up by a great earthquake splits into three distinct forms of wave-motion which, travelling at different rates and along different paths, give rise to the three distinct phases observed in distant seismographic records.

Oldham retired from the Survey in 1903, and for some time lived in the Isle of Wight, where he was near the seismographic station of his great friend, John Milne. His seismological studies were continued; in 1906 he showed that the records of distant earthquakes indicate that the earth has a core very different in properties from the rest, and he determined its diameter approximately. He was indeed a pioneer in the application of seismology to the investigation of the interior of the earth.

In his later years, Oldham spent much time in the south of France, where he studied the history of the Rhône delta, and finally he withdrew to Llandrindod Wells.

Oldham was awarded the Lyell Medal of the Geological Society in 1908, and was president of that Society in 1920-22. He was elected a fellow of the Royal Society in 1911.

P. L.

Prof. Snouck Hurgronje

WE regret to record the death of Prof. Christian Snouck Hurgronje of Leyden, the distinguished authority on the religion and customs of Islam, which took place on June 26 at the age of eighty-one years.

Prof. Hurgronje was not only one of the foremost oriental scholars of his time, but he was also a great exponent of the value in affairs of the study of living native institutions, his intimate knowledge of the languages of the East and of the customs, religion and laws of Islam having proved of signal service to the Colonial Government during his residence in the Dutch East Indies.

Hurgronje was born in 1855; and in 1885 was admitted by the University of Leyden to the degree of doctor in Semitic languages and literature for a dissertation on the Feast of Mecca. He continued his oriental studies at Strassburg, and was then appointed instructor in Arabic and the institutions of Islam at the School of Instruction for Dutch-Indian officials at Leyden. In 1884, with the object of obtaining a first-hand knowledge of the religious exercises of Islam, he went to Jiddah, the landing place of pilgrims to Mecca. Here he remained until fully equipped to enter the holy places of Mecca. This he did with pilgrims from the Dutch East Indies in February 1885, and remained in the city until the following August, living with the pilgrims and carrying out their religious observances, until the killing of the French orientalist, Dr. Huber, while trying to penetrate into the interior from Jiddah, led to his expulsion by the Turkish authorities.

In 1889, Hurgronje began his work in the Dutch East Indies, when he was sent out by the Government at The Hague to act as adviser on Moslem institutions in Java. His appointment, originally for two years only, lasted for many years, so valuable did his services prove to the Government. One of his more notable achievements was in tendering advice to the Colonial Government and the Government at The Hague, which was framed in the light of his study of Achinese institutions, and contributed largely to the pacification of northern Sumatra, where the Government had been carrying on a desultory war with the Achinese since 1873.

Although both Cambridge and Leyden had offered chairs to Hurgronje, he declined all such offers until he could regard his work in the East as completed; but he accepted the professorship of Arabic at Leyden in 1906. Here he was not forgetful of his practical experience in the East, and for the remainder of his life he continued to be a close observer of the effect of modern trends in international relations on the development of Islam, a matter upon which he produced several important and authoritative articles. He presided over the Congress of Orientalists when it met at Leyden in 1931, having also been a member of the Congress when it met previously at Leyden in 1883.

Hurgronje was the author of a large number of contributions to the literature of oriental studies. Among his best-known works are "Mekka" (1888), a study of the Achinese (1893-94), and "Une Nouvelle Biographie de Mohammed" (1894).

Dr. F. J. F. Shaw, C.I.E.

DR. F. J. F. Shaw, whose death in India was recently announced, joined the Indian Agricultural Service in 1910 as a mycologist attached to the Agricultural Research Institute, Pusa. He remained at Pusa for the whole of his service except for a short period at Coimbatore in Madras, and was engaged in research in plant pathology and work on the control of plant diseases until 1928, when he was appointed Imperial economic botanist. Even in this latter appointment much of his work was the breeding of crop plants for resistance to disease, so that he retained his interest in plant pathology in the broad sense. Of late, much of his time was occupied in administrative duties, for he was appointed director of the Imperial Institute of Agricultural Research at Pusa in 1934, and as such had the supervision of the arrangements for transferring the Institute, wrecked by the Bihar earthquake that year, to a new site near Delhi. For the last few months he was at Simla officiating as agricultural expert with the Imperial Council of Agricultural Research; but he left to supervise some of the difficult operations of the transfer of the Institute, and was overcome by the heat at Agra.

Dr. Shaw was best known for his researches on the important fungal parasites of Indian crops belonging to the genus *Rhizoctonia*, and for his studies on the diseases of jute and the control of diseases of

fruit trees and pulses. He was little interested in systematic mycology, and was led astray in the identification of the difficult members of the genus *Rhizoctonia* with which he worked, but he effected a considerable advance in knowledge of their biology and morphology. Of recent years, his chief work was a study of the types of the important Indian pulse crop, pigeon pea (*Cajanus indicus*), with the object of breeding for resistance to the wilt disease caused by *Fusarium vasinfectum*; in this difficult problem, for the crop is extensively out-pollinated, he achieved a considerable measure of success. If the work can be carried to a conclusion it will be of great benefit to Indian agriculture, for the disease is extremely destructive and the parasite so completely infests the soil as to necessitate prolonged rotation if the crop is to yield an adequate harvest. Other work on similar lines has been in progress at Pusa under Dr. Shaw's control on a number of crops such as cereals, linseed, gram (*Cicer arietinum*) and other pulses, tobacco and various fibre and oil seed crops; continuity in such work is essential, and Dr. Shaw's untimely death will greatly accentuate the difficulties of carrying it on, already made serious by the aftermath of the earthquake.

Dr. Shaw, who was fifty years of age, was educated at St. Olave's Grammar School and the Royal College of Science, obtaining the A.R.C.S. and D.Sc. (London). He was made a C.I.E. in the King's birthday honours list of this year.

Prof. Kikunaé Ikeda

By the death of Prof. Kikunaé Ikeda on May 3, Japanese science loses one of its foremost students of chemistry. Some details concerning his life and work appear in the May issue of the *Proceedings of the Imperial Academy, Tokyo*. Prof. Ikeda, who was born on October 8, 1864, studied science at the University of Tokyo and graduated in 1889. During the next seven years, he taught chemistry in the Tokyo Higher Normal School, where, both by his teaching and by the text-books that he published, he greatly assisted the general appreciation in Japan of the new science of physical chemistry.

In 1896, Ikeda was appointed assistant professor of chemistry in the University of Tokyo, in which capacity he came to Europe three years later for further study of physical chemistry. During his stay in Europe, he worked in Ostwald's laboratory, where, in collaboration with Bredig, he published important work on the poisoning of colloidal platinum catalysts. He also worked for a short time at the Davy Faraday Laboratory in London. On his return to Japan in 1901, he was appointed to a full professorship in chemistry, which he held for twenty-two years. During this time he was particularly occupied with the study of chemical kinetics and the theory of solutions. During this period he was appointed chief of the Chemistry Division of the Institute of Physical and Chemical Research, and he served also on the National Research Council of Japan.

On retiring from his professorship in 1923, Prof. Ikeda continued to take an active interest in

chemistry. After a stay of seven years in Germany, he returned to Japan in 1931 and established a private laboratory where he studied various problems concerned with the applications of chemistry. The high esteem in which he was held was shown on his sixtieth birthday, when his friends and former pupils arranged a celebration and raised a large sum of money which, by his wish, was given to the Chemical Society of Japan for the extension of the scientific publications of the Society.

Mr. F. S. Stacey

WE regret to announce the death, on August 11, of Mr. Francis Samuel Stacey, one of the pioneers of radiotelegraphy, at the age of fifty-six years.

Mr. Stacey was a student of Finsbury Technical College, and joined Marconi's Wireless Telegraph Co., Ltd. (then known as The Wireless Telegraph and Signal Co., Ltd.), in July, 1899, at the age of twenty years. After a short period in the Company's works he was employed for some time in experimental work as an assistant to Marchese Marconi, and, in 1900, was engaged in the execution of a contract for the installation of wireless on the whole fleet of Belgian cross-channel steamers. Shortly afterwards he was transferred to Marconi's Wireless Telegraph Company of Canada, where he remained until 1910, engaged in the construction of stations, experimental work, and the operation of the Glace Bay trans-Atlantic wireless station.

Between 1910 and 1912 Mr. Stacey was employed at the Marconi station at Poldhu in Cornwall in connexion with experimental work and development of long-range high-power stations which had their birth at Poldhu. From 1912 until 1914 he was acting chief of the Constructional Section of the Marconi Company, and in 1914 became chief of one of the contract sections which deals with the supply of every kind of commercial wireless telegraph apparatus. Among other things, his department of the Marconi Co. has been concerned with the execution of contracts for nearly all the broadcasting stations in England, and a very large number in Europe, Japan, South Africa, and South America.

Mr. Stacey was married in 1909 to Miss M. McLeod, a Canadian lady, and leaves a widow and two daughters.

WE regret to announce the following deaths:

Prof. Luigi Devoto, professor of industrial diseases and director of the clinic of industrial diseases in the University of Milan, on July 22, aged seventy-two years.

Prof. Aubrey C. Grubb, professor of physical chemistry in the University of Saskatchewan, known for his work on the electrical activation of hydrogen and nitrogen gases, on July 29, aged fifty-two years.

Dr. H. A. D. Jowett, manager of the Wellcome Chemical Works, Dartford, an authority on medicinal alkaloids, on August 10, aged sixty-six years.